WE CLAIM:

1. A process for making a layered article having a curved surface, comprising:
providing a nonplanar layer of a wrought supported metal; providing a nonplanar layer of a supporting metal; finishing mating surfaces of said supported and supporting metal layers; aligning the finished mating surfaces of the supported and supporting metal layers; expanding the supported layer mechanically against the supporting layer; expanding the supported layer against the supporting layer by applying hydraulic pressure to the supported layer; applying pneumatic pressure to the supported layer and heating the article to up to 98% of the absolute melting point of the lower melting metal for up to several days; and cooling the article.

2. The process of claim 1 wherein the article is heated to within 50-95% of the absolute melting point of the lower melting metal.

3. The process of claim 1 wherein the article is heated for 1 to 24 hours.

4. The process according to claim 1, further comprising after said finishing step, applying an about 0.1 μm thick layer of oxidation resistant metal to the finished surface of the supported layer or supporting layer, or both.

5. The process according to claim 4, wherein the oxidation resistant metal is gold.

6. The process according to claim 4, wherein the oxidation resistant metal is palladium.

7. The process according to claim 1 wherein the mating surfaces of the supporting and supported layers are finished to a surface roughness of at least about RMS 8.

8. The process according to claim 1 further comprising evacuating a space between the supported and supporting layers.

9. The process according to claim 1 further comprising evacuating a space between the supported and supporting layers, said evacuating being performed between the mechanical expansion step and the hydraulic expansion step.

10. The process according to claim 1 wherein the supporting metal layer is an alloy of nickel and the supported metal layer is gold.

11. The process according to claim 1 wherein the supporting metal layer is an alloy of nickel and the supported metal layer is palladium.

12. The process according to claim 1 wherein the thickness of the interfacial region is less than 150% of the original thickness of the supported metal layer.

13. The process according to claim 1 wherein the thickness of the interfacial region is less than 50% of the original thickness of the supported metal layer.

14. The process according to claim 1 wherein the thickness of the interfacial region is less than 25% of the original thickness of the supported metal layer.

15. A process for making a tube comprising:
providing a tubular outer layer of a supporting metal, and a tubular inner layer of a wrought supported metal; finishing an outer mating surface of the inner layer and an inner mating surface of the outer layer; inserting the inner layer into the outer layer; expanding the inner layer mechanically against the outer layer; expanding the inner layer against the outer layer by applying hydraulic pressure; applying pneumatic pressure to the inner layer and heating the article to up to 98% of the absolute melting point of the lower melting metal for up to several days; and cooling the tube.

16. The process according to claim 15, further comprising after said finishing step, applying an about 0.1 μm thick layer of oxidation resistant metal to the finished surface of either the inner layer or the outer layer, or both.

17. The process according to claim 16, wherein the oxidation resistant metal is gold.

18. The process according to claim 16, wherein the oxidation resistant metal is palladium.

19. The process according to claim 15 wherein the tube is heated to 50 to 95% of the absolute melting point of the lower melting metal.

20. The process according to claim 15 wherein the tube is heated for 1 to 24 hours.

21. The process according to claim 15 wherein the inner mating surface of the supporting layer and the outer mating surface of the supported layer are finished to a surface roughness of at least about RMS 8.

22. The process according to claim 15 further comprising evacuating the space between the supported and supporting layers.

23. The process according to claim 15 further comprising evacuating the space between the supported and supporting layers, said evacuating being performed between the mechanical expansion step and the hydraulic expansion step.

24. The process according to claim 15 wherein the tubular outer layer is an alloy of nickel and the tubular inner layer is gold.

25. The process according to claim 15 wherein the tubular outer layer is an alloy of nickel and the tubular inner layer is palladium.

26. The process according to claim 15 wherein the thickness of the interfacial region is less than 150% of the original thickness of the tubular inner layer of supported metal.

27. The process according to claim 15 wherein the thickness of the interfacial region is less than 50% of the original thickness of the tubular inner layer of supported metal.

28. The process according to claim 15 wherein the thickness of the interfacial region is less than 25% of the original thickness of the tubular inner layer of supported metal.